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with items readily available in most surgical theatres.

Method: The surgeon should first wear an "All" type of theatre hat (£19.28 for box of 100, Mölnlycke Health Care) to ensure coverage of the hair and sideburns. Then, taking a standard surgical mask (£3.81 for box of 60, Mölnlycke Health Care), he should place the upper-most border under his bottom lip and secure it provisionally in place by tying the upper-most ties. He should then proceed to tuck his entire beard into the mask, and secure the remaining pair of ties on the top of his head. The precautions can be completed with a second face mask applied in the usual manner.

Discussion: This simple alternative provides adequate coverage of facial hair and can be achieved using items available in most theatre departments. Despite the use of an additional face mask, the cost still compares favourably with the use of a surgical hood and single mask (32p versus £1.34). In the current financial climate, it is imperative that all healthcare professionals employ ways of cutting costs in a safe and effective manner.

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Effective management of suspected scaphoid fractures—a problem with protocols?

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Introduction: Scaphoid fractures can be difficult to diagnose. If missed, they may result in significant morbidity including non-union of the fracture and early osteoarthritis at the radiocarpal joint. A timely diagnosis and appropriate management reduces these adverse outcomes. A protocol exists at our centre for the management of patients with suspected scaphoid fractures, designed by the Orthopaedic and Radiology Departments.

Aims: To determine whether the protocol is adhered to and whether it is effective in managing this patient group.

Patients and methods: 63 patients from those treated using the protocol over a 16-month period were included in the study. Patients with incomplete data from the notes were excluded. A retrospective analysis was conducted of clinical information from the Accident and Emergency (A&E) and Fracture Clinic notes, together with plain X-rays and bone scan images. The interpretation of the bone scan radiology was performed by a Consultant Radiologist.

Results: Of the 63 patients treated for suspected scaphoid fracture, the diagnosis was confirmed in 14 patients according to bone scan reports. Five patients had inappropriate histories and two had no bony tenderness on presentation to A&E, suggestive of an alternative diagnosis. In 29 cases no scaphoid views were taken initially. Mean time to bone scan (once requested) was 11.2 days (three day limit defined as acceptable by the protocol) and from presentation to fracture clinic with a bone scan result was 33.5 days. Mean time in plaster was 36 days. Six further magnetic resonance imaging (MRI) scans and two computed tomography scans were performed. Five operations were conducted.

Conclusion: The study gives a detailed insight into the management of these suspected fractures at our centre. The protocol is not being adhered to regarding the scaphoid views and the timing of the bone scan. The timescale of the management means that a significant proportion of patients have no change in their management as a result of the bone scan and spend an unnecessarily long period in plaster. This delay can result in unwanted effects including wrist stiffness and absence from the workplace whilst in cast. The current management of this group of patients is not effective in our centre. Changes have been made to practice with an early referral to the Hand Surgery Fracture Clinic and early MRI scan. Protocols are

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Technique and results of ante grade intramedullary pinning of metacarpal fractures using a single pre-bent Kirschner wire

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We reviewed our results and complications of using a pre-bent Kirschner wire (K-wire) for extra-articular metacarpal fractures. The surgical procedure was indicated for angulation at the fracture site in a true lateral radiograph of at least 30° and/or in the presence of a rotatory deformity. A single K-wire is pre-bent in a lazy-S fashion with a sharp bend at approximately 5 millimetres and a longer smooth curve bent in the opposite direction. After an initial entry point made at the base of the metacarpal using a drill wire by hand, the K-wire is inserted blunt end first in an ante grade manner and the fracture reduced as the wire is passed across the fracture site. With the wire acting as a three-point fixation, early mobilisation is commenced at the metacarpo-phalengeal joint in a hand splint. The wire is usually extracted post-operatively at 4 weeks.

We studied internal fixation of 18 little finger and 2 ring finger metacarpal fractures from November 2007 to August 2009. The average age of the cohort was 25 years with 3 women and 17 men. The predominant mechanism was a punch injury with 5 diaphyseal and 15 metacarpal neck fractures. The time to surgical intervention was a mean 13 days (range 4 to 28days). All fractures proceeded to bony union and had the wire extracted at an average of 4.4 weeks (range 3–6 weeks). At an average follow up of 8 weeks, one fracture had to be revised for failed fixation and three wound infections needed antibiotic treatment.

With this simple and minimally invasive technique, most of these patients underwent day case surgery and were able to start mobilisation immediately. The general outcome was good hand function with few complications.

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The adequacy of radiological imaging in hand trauma prior to orthopaedic review. Sunderland royal hospital

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Background: The American College of Radiologists recommends that in cases of hand trauma, with suspected injury to carpal, metacarpal or phalangeal bone, minimum imaging for diagnosis and management should be AP, oblique and lateral films of the hand. Plain films with only two views are inadequate for detecting fractures. Many patients are referred to us from primary care centres and our A&E department with inadequate imaging in cases of hand trauma. This means patients attend radiology for a second time before management plans can be established. This causes additional waiting, inconvenience to patients and is a time and resource burden for radiology and orthopaedics.

Method: We retrospectively reviewed 100 fracture clinic patients with hand trauma between August and September 2009. All patients had a traumatic mechanism of injury to the hand with clinically suspected fractures. All 100 had "HAND" X-rays requested by the referring centre. We did not include patients with imaging requests for carpal bones e.g. "SCAPHOID" as radiology would provide four views for these patients according to their guidelines. We

looked at who had referred the patient, the imaging obtained and what diagnoses were subsequently made.

Results: 88/100 patients with hand trauma and "HAND" X-rays were found to have acute fractures. Only 47 presented to trauma clinic with sufficient imaging (AP/oblique/lateral hand X-ray) of which 44 were found to have acute bony injuries. For 53 patients, (44 of which had an acute injury), no lateral imaging of the hand was performed. All 100 patients had AP/oblique images. 20/100 patients were referred from our own A&E department, 60% of which had insufficient imaging. Only 50% (range 42–72% between four referring centres) of the other 80 patients had sufficient imaging.

Conlclusions: The lateral film is imperative for correct diagnosis and management in hand trauma. However, the majority of patients seen in fracture clinic are referred with inadequate imaging. After initial consultation with an orthopaedic specialist, many of these patients are then required to attend radiology for a second time before a correct diagnosis is established. With potential additional costs of up to £510 based on the cost of the required additional plain film for each of the 53 patients in our small group, this has significant financial implications for the orthopaedic department. We recommend that a guideline be made available to all referring centres, incorporating guidance on minimum required investigations prior to referral in all cases of hand trauma.

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The impact of MRI scans in acute wrist injuries

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Aim: The aim of this study (1) to find out the role and usefulness of MRI scans in acute wrist injuries, (2) to assess the prevalence and distribution of multiple occult injuries of the carpal bones and distal forearm bones. The patients who are being referred to trauma clinic as query scaphoid fractures are included in the study.

Materials and methods: One hundred and ten patients were included in the study. A retrospective analysis of all these patients for a period of 2 years were carried out. All patients who have been referred to trauma clinic as scaphoid fractures were included. All of them had an initial period of conservative treatment either with a scaphoid cast or a future splint for 2 weeks. The patients who had persisting symptoms in the nature of pain, tenderness were sent for MRI scans. These patients had no bony injuries in the plain X-rays (scaphoid views) There were72 males and 38 females. The age group varied from13 to 71 years (average 35.14 years). The right side was involved in 56 case, 2cases were bilateral. The dominant side was in 52 cases, in 16 patients the dominant side was not mentioned. MRI was performed with and without fat saturation sequences. The MR images were analysed for detection of occult trabecular contusions and cortical discontinuity in the carpus, the distal forearm, intercarpal ligaments and metacarpal bases.

Results: A total of 110 wrists were analysed. Fourteen (13%) had occult bone fractures. Among these 14, only 3 (2%) had scaphoid fractures diagnosed by MRI scans. The other carpal bones fractured were hook of hamate (4) and trapezium (2). Nine (8%) patients had fracture of distal radius, TFCC tear was noted in 5 (4%), carpal degeneration was seen in 8 (7%). The other findings were ganglion,14 (13%) and bone bruising,12 (11%). Three (2%) had Kienbock's disease.

Conclusion: The MRI scans is a useful tool in obtaining a definite diagnosis in acute wrist injuries. However in the diagnosis of occult scaphoid fracture after two weeks, the chance of finding a definite fracture in the scaphoid is only 2%. We conclude that in majority of patients with persisting symptoms after 2 weeks following a wrist trauma, the cause of symptoms will be pathology in other tissues in the wrist including soft tissues, other carpal bones and distal forearm

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The use of antibiotics in hand injury

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Introduction/aims: Open hand injuries are common. There are various opinions in the literature about antibiotic usage of these injuries. This variation, especially when dealing with dirty injuries is reflected in the current literatures. This audit reviews our clinical experience, and current literature in the antibiotic management of this injury

Methodology/results/discussion: We reviewed 98 patients over 3 consecutive months in 2008 with open hand injuries. 27 patients had clean injuries and 71 had dirty injuries. Clean injuries were defined as "an injury less than 24 h to presentation, and wounds not involving bites, or crush, bone and joint or gross contamination." Dirty injuries were injuries which fell outside this definition. All wounds were thoroughly debrided in theatre.

Out of 27 clean injuries, 19 patients (70%) received no post-surgical antibiotics and the rest had. Both developed no complications at wound check at 2 weeks.

Out of 71 dirty wounds, 57 patients (80%) received antibiotics post operatively. In this group, there was a variation in terms of type, length and dosage of antibiotics prescribed.

Conclusion: Clean wounds, with through surgical debridement should not be initiated with post-surgical antibiotics. For dirty wounds, uniformity of post surgical antibiotics is the goal, as this has implications on cost, whilst safe guarding high standard of post surgical care for patients. However, the complexity of these wounds makes this a difficult task.

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The use of a suture room for the treatment of upper limb lacerations

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Upper limb lacerations are a common injury. Traditionally, these have been assessed and treated in the Emergency Department (ED). This has become increasingly rare. A number of different reasons have been postulated. These include the increasingly junior status of those that work within the ED and the 4 h target within the ED.

After referral to the orthopaedic department, these patients are often assessed by increasingly junior staff. Thus, when these patients are assessed by a sufficiently qualified practitioner, there exists no option but to take them to theatre for repair of their injury. The aim of our study was identify the number of patients requiring surgery for hand and wrist lacerations and identify if these patients could be managed without the need for theatre.

We collected data in a prospective fashion from 1/9/09 to 3/11/09 at a large district general hospital.

Over a 10-week period, 36 patients required surgery for their hand or wrist laceration. 27 were male and 9 were female. The average age was 34 years. The average length of procedure from was 21 min. 32% of patients were admitted overnight.

In two thirds of cases, the operating surgeon felt the procedure could have been performed in a suture room rather than in theatre. Among those patients who could have been operated on within a suture room, 21 would not have required an admission for any other reason.